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EXAMINER	
LEE, NATHANIEL JAMES	
ART UNIT	**PAPER NUMBER**
4126	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,872	FUJITA ET AL.	
	Examiner	Art Unit	
	NATHANIEL J. LEE	4126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☒ Claim(s) *1 and 8-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *18 May 2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. In the title, “phosphor” is miss-spelled “phoshor”.

2. The disclosure is objected to because of the following informalities: frequent grammatical errors, the most common of which is inconsistent use of plural forms, for example, on page 3, line 16; “...and shortening the lifespan of devices, such as light emitting diode". This sentence should either use “a device” and “a light emitting diode” or “devices” and “light emitting diodes”. Other mistakes exist and a thorough revision is required.

Appropriate correction is required.

Claim Objections

3. Claims 1, 8, 9, 10 objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, from which claims 8, 9, and 10 depend, there is claimed "a phosphor composed of a single inorganic material", yet in claims 8, 9, and 10, the phosphor is composed of many different materials. Clarification is required. For the purposes of this action, claim 1 will be interpreted as meaning one active inorganic material, and claims 8, 9, and 10 will be interpreted as being either encompassed by or an obvious variant of claim 1.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 4-14 rejected under 35 U.S.C. 102(b) as being anticipated by Reeh et al. (US 2001/0000622 A1).

6. With respect to claim 1: Reeh et al. (US 2001/0000622 A1), hereafter known as Reeh, discloses "a phosphor (6 (Fig. 3)) composed of a single inorganic material (page 4 paragraph 51), wherein when an excitation light composed of visible light is irradiated thereon (page 1 paragraph 13), the phosphor emits a fluorescence of complimentary color with respect to a hue of the excitation light (page 1 paragraph 13), and a portion of the excitation light transmits through the phosphor (page 1 paragraph 13)".

7. With respect to claim 2: Reeh discloses "the phosphor according to claim 1 having a panel shape (6 (Fig. 3)".

8. With respect to claim 4: Reeh discloses "The phosphor according to claim 1, wherein the excitation light composed of visible light is a light of which center

wavelength is between 430 to 490 nm (page 8 paragraph 109), and the fluorescence is a light of which center wavelength is between 530 to 590 nm (page 8 paragraph 109)".

9. With respect to claim 5: Reeh discloses "the phosphor according to claim 1 composed of a crystallized glass including Ce3+ and formed by precipitating a garnet crystal (page 4 paragraph 49)". Claim 5 is a product by process claim; what is claimed is the product, not the process, so the method of forming the crystallized glass is irrelevant.

10. With respect to claim 6: Reeh discloses "the phosphor according to claim 5, wherein the garnet crystal is YAG crystal or YAG crystalline solid solution (page 4 paragraph 49)".

11. With respect to claims 8, 9, and 10: In light of the objection made to these claims (see above), claims 8, 9, and 10 are presently viewed as being either encompassed by, or obvious variants of, claim 1, and are accordingly rejected along with claim 1.

12. With respect to claim 11: Reeh discloses "a light-emitting diode utilizing the phosphor according to claim 1 (Fig. 3)".

13. With respect to claim 12: Reeh discloses "a light-emitting diode (Fig. 3) comprising: a stem including a cathode lead terminal (2 (Fig. 3)) and an anode lead terminal (3 (Fig. 2)), a light-emitting diode chip connected to the anode lead terminal (1 (Fig. 3)), a metal wire connecting the cathode lead terminal and the light-emitting diode chip (14 (Fig. 3)), a housing vessel that is fixed such that the stem and the light-emitting diode chip are air-tightly sealed (8 (Fig. 3)), and of which a window portion is formed

above the light-emitting diode chip (4 (Fig. 2)), and the phosphor according to claim 1 attached to the window portion of the housing vessel (6 (Fig. 2))".

14. With respect to claim 13: Reeh discloses "a crystallized glass including Ce3+ and formed by precipitating a garnet crystal (page 4 paragraphs 49 and 51)". Claim 13 is a product by process claim; what is claimed is the product, not the process, so the method of forming the crystallized glass is irrelevant.

15. With respect to claim 14: Reeh discloses "the crystallized glass according to claim 13, wherein the garnet crystal is YAG crystal or YAG crystalline solid solution (page 4 paragraph 49)".

16. Claims 13, 15-18 rejected under 35 U.S.C. 102(b) as being anticipated by Conzone et al. (US 6,652,972 B1).

17. With respect to claim 13: Conzone et al. (US 6,652,972 B1), hereafter known as Conzone, discloses "a crystallized glass including Ce3+ and formed by precipitating a garnet crystal (Table 1)". Claim 13 is a product by process claim; what is claimed is the product, not the process, so the method of forming the crystallized glass is irrelevant.

18. With respect to claim 15: Conzone discloses "the crystallized glass according to claim 13 including 0.01 to 5 mol% of Ce2O3 (Table 1)".

19. With respect to claim 16: Conzone discloses "the crystallized glass according to claim 13 including 10 to 60 mol% of SiO2 + B2O3 (Table 1), 15 to 50 mol% ofAl2O3 + GeO2 + Ga2O3 (Table 1), 5 to 30 mol% of Y2O3 + Gd2O3 (Table 1), 0 to 25 mol% of

Li2O (Table 1), 0 to 15 mol% ofTiO2 + ZrO2 (Table 1), and 0.01 to 5 mol% of Ce2O3 (Table 1)".

20. With respect to claim 17: Conzone discloses "the crystallized glass according to claim 16 including essentially no TiO2 and ZrO2 (Table 1)".

21. With respect to claim 18: Conzone discloses "The crystallized glass according to claim 13 including 10 to 50 mol% of SiO2 (Table 1), 15 to 45 mol% of Al2O3 (Table 1), 5 to 30 mol% of Y2O3 (Table 1), 0 to 15 mol% of GeO2 (page 1 line 51), 0 to 20 mol% of Gd2O3 (Table 1), 0 to 15 mol% of Li2O (Table 1), 0 to 30 mol% of CaO + MgO + Sc2O3 (Table 1), and 0.01 to 5 mol% of Ce2O3 (Table 1).

22. Claims 1-6, 8-14 rejected under 35 U.S.C. 102(e) as being anticipated by Ng et al. (US 2005/0006659 A1).

23. With respect to claim 1: Ng et al. (US 2005/0006659 A1), hereafter known as Ng, discloses "a phosphor (107 (Fig. 2)) composed of a single inorganic material (page 2 paragraph 14), wherein when an excitation light composed of visible light is irradiated thereon (page 2 paragraph 14), the phosphor emits a fluorescence of complimentary color with respect to a hue of the excitation light (page 2 paragraph 14), and a portion of the excitation light transmits through the phosphor (page 2 paragraph 14)".

24. With respect to claim 2: Ng discloses "the phosphor according to claim 1 having a panel shape (Ng claim 5 or Ng claim 8)".

25. With respect to claim 3: Ng discloses "The phosphor according to claim 2 of which a wall thickness is between 0.1 mm to 2mm (page 2 paragraph 15)".

26. With respect to claim 4: Ng discloses "The phosphor according to claim 1, wherein the excitation light composed of visible light is a light of which center wavelength is between 430 to 490 nm (page 1 paragraph 10), and the fluorescence is a light of which center wavelength is between 530 to 590 nm (page 1 paragraph 10)". It is to be understood that the color yellow is defined as light with a spectrum from 570-590 nm.

27. With respect to claim 5: Ng discloses "the phosphor according to claim 1 composed of a crystallized glass including Ce3+ and formed by precipitating a garnet crystal (page 1 paragraph 10)". Claim 5 is a product by process claim; what is claimed is the product, not the process, so the method of forming the crystallized glass is irrelevant.

28. With respect to claim 6: Ng discloses "the phosphor according to claim 5, wherein the garnet crystal is YAG crystal or YAG crystalline solid solution (page 1 paragraph 10)".

29. With respect to claims 8, 9, and 10: In light of the objection made to these claims (see above), claims 8, 9, and 10 are presently viewed as being either encompassed by, or obvious variants of, claim 1, and are accordingly rejected along with claim 1.

30. With respect to claim 11: Ng discloses "a light-emitting diode utilizing the phosphor according to claim 1 (100 (Fig. 2))".

31. With respect to claim 12: Ng discloses "a light-emitting diode (100 (Fig. 2)) comprising: a stem including a cathode lead terminal (112 (Fig. 2)) and an anode lead

terminal (113 (Fig. 2)), a light-emitting diode chip connected to the anode lead terminal (105 (Fig. 2)), a metal wire connecting the cathode lead terminal and the light-emitting diode chip (103 (Fig. 2)), a housing vessel that is fixed such that the stem and the light-emitting diode chip are air-tightly sealed (101 (Fig. 2)), and of which a window portion is formed above the light-emitting diode chip (107 (Fig. 2)), and the phosphor according to claim 1 attached to the window portion of the housing vessel (107 (Fig. 2))".

32. With respect to claim 13: Ng discloses "a crystallized glass including Ce3+ and formed by precipitating a garnet crystal (page 2 paragraph 18)". Claim 13 is a product by process claim; what is claimed is the product, not the process, so the method of forming the crystallized glass is irrelevant.

33. With respect to claim 14: Ng discloses "the crystallized glass according to claim 13, wherein the garnet crystal is YAG crystal or YAG crystalline solid solution (page 2 paragraph 18)".

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

35. Claims 1, 5, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reeh et al. (US 2001/0000622 A1) in view of Maegawa (US 2002/0171911 A1).

36. Claims 1 and 5 are anticipated by Reeh (see above).

37. With respect to claim 7: Reeh does not disclose "the phosphor according to claim 5 including 0.01 to 5 mol% of Ce203". However, Maegawa (US 2002/0171911 A1), hereafter known as Maegawa, discloses "the phosphor according to claim 5 including 0.01 to 5 mol% of Ce203 (page 2 paragraph 24)". It would have been obvious at the time of the invention for one of ordinary skill in the art to modify the phosphor of Reeh with the dopant concentration of Maegawa, with the motivation given by Maegawa on page 2 paragraph 24 that this is the preferred ratio for YAG:Ce.

Conclusion

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Murazaki et al. (US 2004/0095063 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANIEL J. LEE whose telephone number is (571)270-5721. The examiner can normally be reached on Monday-Thursday, 8:00 a.m.-5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Nguyen can be reached on (571)272-2424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. J. L./
Examiner, Art Unit 4126

/James P. Hughes/
Primary Examiner, Art Unit 2883